

REMARKS

Claims 1 - 8, 10 - 18, and 23 - 25 are in this application and are presented for reconsideration. By this Amendment, Applicant has amended Claims 11, 16 and 25, canceled Claims 9 and 19 - 22 and made minor changes to the specification to address issues raised in the Office Action.

Applicant thanks the Examiner for the careful reading of the application, and for providing suggestions. Applicant also thanks the Examiner for indicating allowed and allowable subject matter and has amended Claim 16 to place it in independent form and including all combination of features of the base claim.

By this Amendment, the Applicant has amended the specification and several claims to overcome the rejections and respectfully makes assertions for overcoming the rejections of the outstanding Office Action dated September 29, 2004 in the following paragraphs and requests reconsideration of the Final Rejections of the claims.

Election/Restrictions

The Office Action stated that the non-elected claims be cancelled.

In response, Applicant has canceled the claims 9 and 19 - 22.

Specification

The Office Action objected to the disclosure stating that the terminology used in the claims is not always the same as the terminology used in the description of the Preferred Embodiment section of the specification and gave example of divided circumferential header? of claim 10.

Applicant has reviewed the specification and has amended the specification to include the terminology as used in the claims.

Claim Objections

The Office Action objected to claims 11 and 25 for not using the plural form of each of said transition zone? In addition, office action objected to claim 25 for depending on claim 25.

Applicant has amended the appropriate phrases in claims 11 and 25. In addition, Applicant has clarified claim 25 by having it depend on claim 23.

Claim Rejections - 35 USC 112

The Office Action rejected claim 25 as being indefinite because it is dependent on itself.

As noted above, Applicant has amended claim 25 to depend on claim 23.

Claim Rejections - 35 USC 102

The Office Action rejected claims 1 - 7 under 35 USC 102(b) as being anticipated by

Swickard et al. (U.S. Patent No. 3,461,495).

Swickard ? 95 reference discloses a die plate for plastic pelletizer having radially extending manifolds dividing the plate into actuate segments for the purpose of applying heat to the die plate in which each segment is formed with parallel heated fluid passageways some of which intersect the manifolds on each side of the segment and some of which open into cavities providing for the return flow of heating fluid, in which extrusion orifices are arranged in parallel rows between the heating passageways to receive heat therefrom, and in which the die plate is formed with radial reinforcing ribs on the inlet side corresponding to the position of the radial manifolds.

The arrangement of the heating passageways is crucial in distinguishing the Swickard prior art reference from the present invention as claimed. As can be seen in Fig. 3 of the prior art reference, some of the passageways (50) start from (34) and move radially to (40). Then, it travels down a return flow (45) to return passageways and out to (35). It is important to note that all this heating passageways traffic occurs perpendicular to the longitudinal rows of orifices (60).

This is further substantiated in the disclosure of the Swickard reference on column 3, line 72 to column 4, line 3, which states as follows:

a number or central group of the passageways 50 in the central portion of the sector extend from each of the outer chambers 34 to the corresponding end portions of a pair of adjacent inner chamber 40 which are overlapped by the chamber 34. Adjacent

groups of the passageways 50 extend from each adjacent outer chamber 35 to intersect each of the manifolds 45.

The present invention as claimed provides a vastly improved heating method. As stated in claim 1, the

...heating medium conduits forming a heating medium system,
said heating medium conduits including at least one conduit
adjacent to each polymer channel for heating the polymer
channel; ...

This fact that the conduit is substantially adjacent the polymer channel is best illustrated by Figure 7 which shows that the header 20 and 22 are substantially adjacent to the polymer feed channel 38.

Such difference in the disclosure of the prior art reference from the present invention as claimed is crucial. The Swickard reference design of the heat channel (50) and the inlet and outlet header (34 and 35) can not produce a uniform heating across the die, as the length and the area in the heating channels and in the inlet/outlet header are different. Therefore, the flow of heating (cooling) media is not uniform due to the different pressure drop in the heating channels.

Because the present invention as claimed provides for a heating channel that is adjacent to the polymer channel, and thus provides for a uniform pressured heating (cooling) of the media, the present invention is not anticipated by the Swickard reference.

Because claims 2 - 7 depend on the independent claim 1 which reads over the prior art

reference, and the dependent claim also includes the combination of features which are not present in the Swickard reference, it is the position of the Applicant that the dependent claims are also not anticipated and thus patentable.

Claims 10 - 15 have been rejected under 35 USC 102(e) as being anticipated by Yoshii et al. (US Patent No. 6,638,045).

Yoshi reference discloses a die for manufacturing resin pallets which is provided with a number of nozzle orifices in the outer surface of the die, with a plurality of rows of heat channels which extend in a direction crossing the resin channels in the vicinity of the outer surface of the die and are arranged along the resin channels. At least one of an introducing course and a discharging course for a heat medium in the plurality of heat channels is also provided.

The Yoshii reference also fails to provide a heating channel that is adjacent to the polymer channel. Specifically, the header design (part 9 and 10) of the Yoshii reference can not provide a uniform heating for the heat channels (part 8), as they are divided in several smaller headers. For example, when the pressure drop in the connecting piping, etc. is not uniform, the flow of the heating (cooling) media is unequal.

According to the Figure 1 of the Yoshii reference, the length of the channels (part 8) are different, and thus, the flow through each heat channel (part 8) can not be uniform due to different pressure drop of each heat channel.

Furthermore, the pressure drop relation between the header (9 and 19) and the heating channels are not large enough, in order to create sufficient pressure drop for a uniform heating

flow distribution across the die.

Therefore, the Yoshii reference also fails to anticipate the claims 10 - 15 of the present invention as claimed.

OBVIOUSNESS REJECTION - 35 U.S.C. SECTION 103

Claim 8 has been rejected as being obvious based on the teachings of Swickard reference. Additionally, claim 8 has also been rejected as being obvious over the teachings of Yoshii reference.

It is Applicant's position that claim 8 is not obvious in view of either Swickard or Yoshii references. The present invention as claimed provides for a combination of features not taught by the prior art as a whole including the two references. For instance, there are several differences for the present invention as claimed. Specifically, the geometry pattern as claimed in claim 8 is described in the specification. Such combination of features not taught by the prior art provides several improved effect for the present invention as claim. For instance, the present invention as claimed has the advantage of providing a polymer channel with optimal pallet quality.

Furthermore, Applicant finds no incentive which would lead a person to all the structural features of the present invention as claimed in claim 8.

Claims 17 and 18 have been rejected under 35 USC 103 (a) as unpatentable over combination of several prior art references including Yoshi, Swickard, Mallay (4,167,386),

Hamilton (3,847,530), and Wolf Jr. (4,378,964).

The references clearly fails to teach and fails to suggest the combination of the invention. Absent a teaching or suggestion of the important feature of the invention, the combined references clearly do not direct the person of ordinary skill in the art toward the combination as claimed.

There must be some suggestion or teaching in the prior art as a whole which would lead the person of ordinary skill in the art to provide the combination as claimed. As the prior art as a whole fails to direct the person of ordinary skill in the art toward the claimed combination, the invention should be considered not anticipated, non-obvious and thus patentable.

As the prior art fails to suggest the combination of features as claimed, Applicant respectfully requests that the Examiner favorably consider the claims as now presented.

At this time, Applicant respectfully requests reconsideration of this application in view of the above amendments and remarks, and Applicant respectfully solicits allowance of this application.

It is applicant's position that all claims are now allowable. In order to facilitate the crucial differences of the present invention that is not present in the prior art references, the Examiner is requested to contact Applicant's representative at the number listed below.

Favorable action is requested.

Respectfully submitted

for Applicant,

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